

KIC 006307573

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
006307573-01	OBS	No	29.741432	157.485111	90.5	21.128	7.1	7.6	0.54	4841	0.57	5.69

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
006307573-01	OBS	FP	0.00	1	0	1	1	LPP_DV—CENT_RESOLVED_OFFSET—EPHEM_MATCH

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

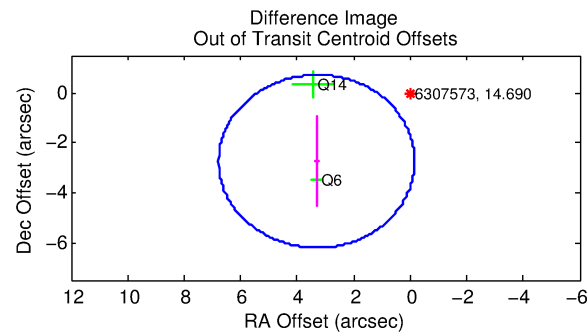
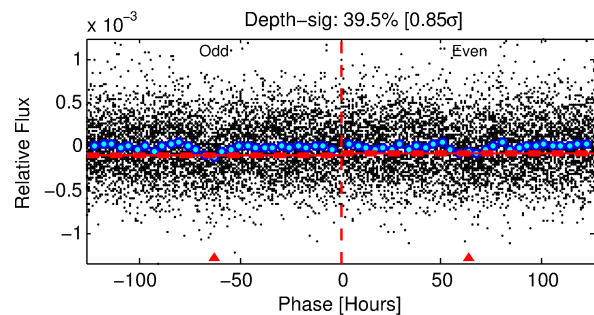
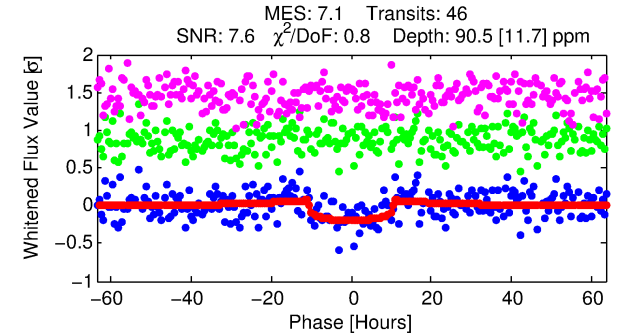
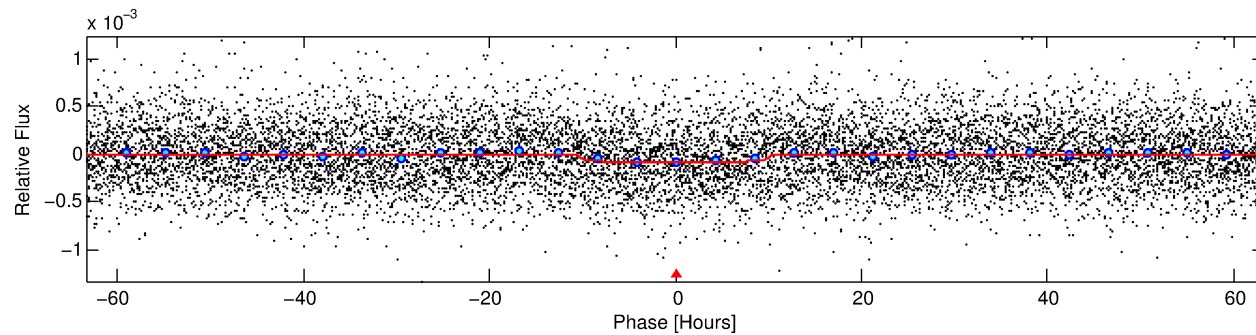
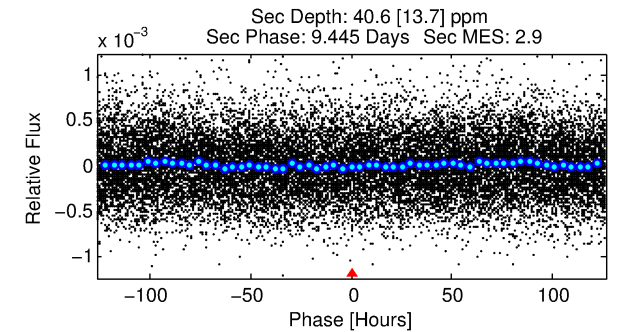
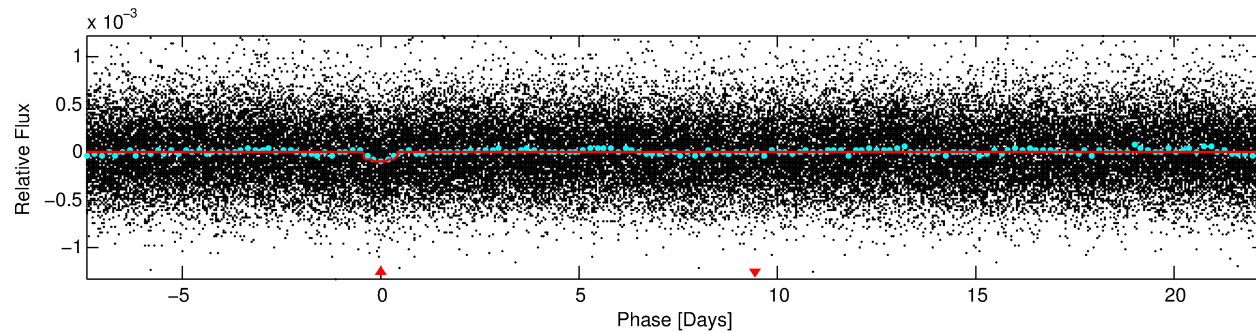
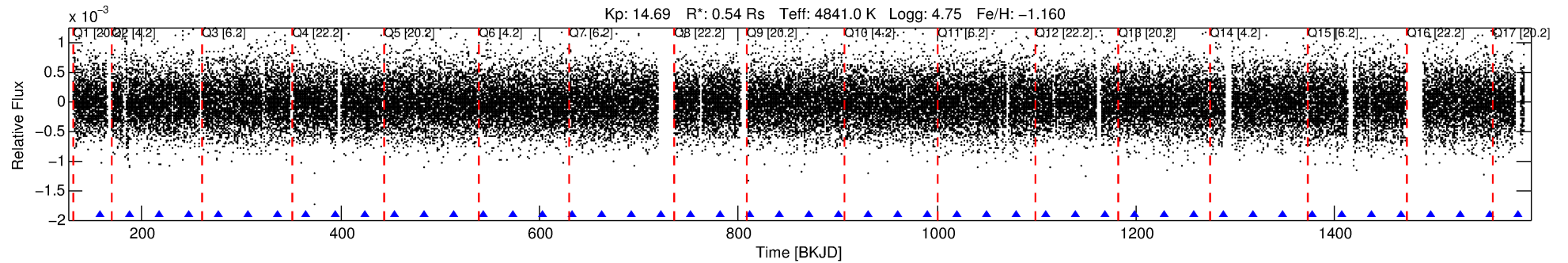
Ephemeris Match Information For 006307573-01

TCE (1)	KIC	Parent (2)	Parent KIC	$P_1:P_2$	Dist ($''$)	Δ Row	Δ Col	m_2	m_1	D_2/D_1	Mechanism	Flag	σ_P	σ_T
006307573-01	6307573	006307537-pri	6307537	1:1	48.2	12	-1	11.75	14.69	1963.70	Direct-PRF	0	2.66	1.80

Notes: $P_1:P_2$ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m_2 and m_1 are the magnitudes of the parent and child. D_2/D_1 is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 6307573 Candidate: 1 of 1 Period: 29.741 d



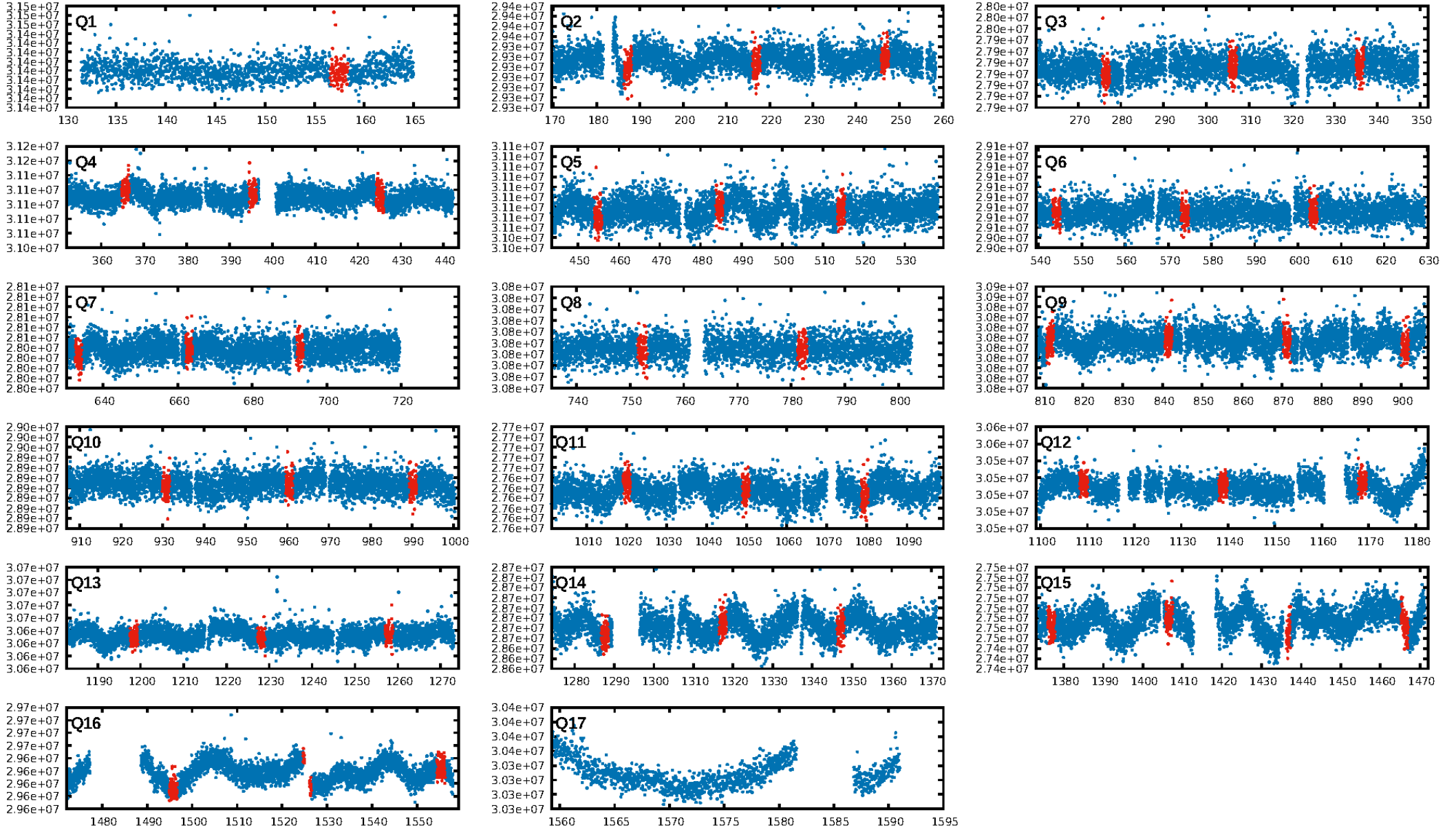
DV Fit Results:

Period = 29.74143 [0.00119] d
Epoch = 157.4851 [0.0312] BKJD
Rp/R* = 0.0097 [0.0030]
a/R* = 6.63 [8.01]
b = 0.80 [0.55]
Seff = 5.69 [0.87]
Teff = 394 [15] K
Rp = 0.57 [0.18] Re
a = 0.1577 [0.0101] AU
Ag = 1718.92 [1217.88] [1.41 σ]
Teffp = 3920 [698] K [5.05 σ]

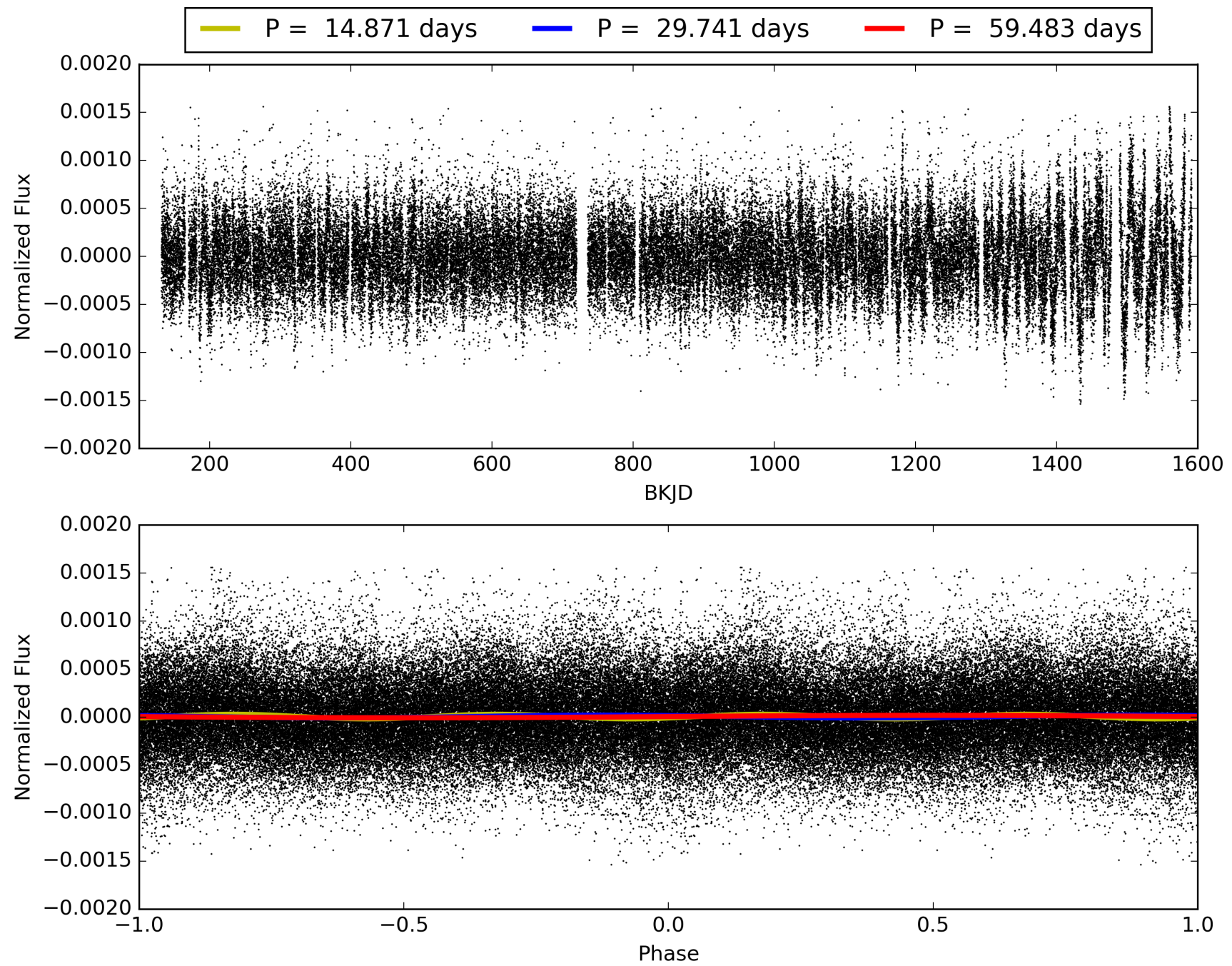
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: N/A
ModelChiSquare2-sig: 93.9%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 6.37e-12
RollingBand-fgt: 1.00 [45/45]
GhostDiagnostic-chr: 0.4432
Centroid-sig: 29.7%
Centroid-so: 0.984 arcsec [0.41 σ]
OotOffset-rm: 4.302 arcsec [3.72 σ]
KicOffset-rm: 4.242 arcsec [3.87 σ]
OotOffset-st: 2/0/0/0 [2]
KicOffset-st: 2/0/0/0 [2]
DiffImageQuality-fgm: 0.00 [0/2]
DiffImageOverlap-fno: 1.00 [15/15]

TCE 006307573-01, PDC Light Curves

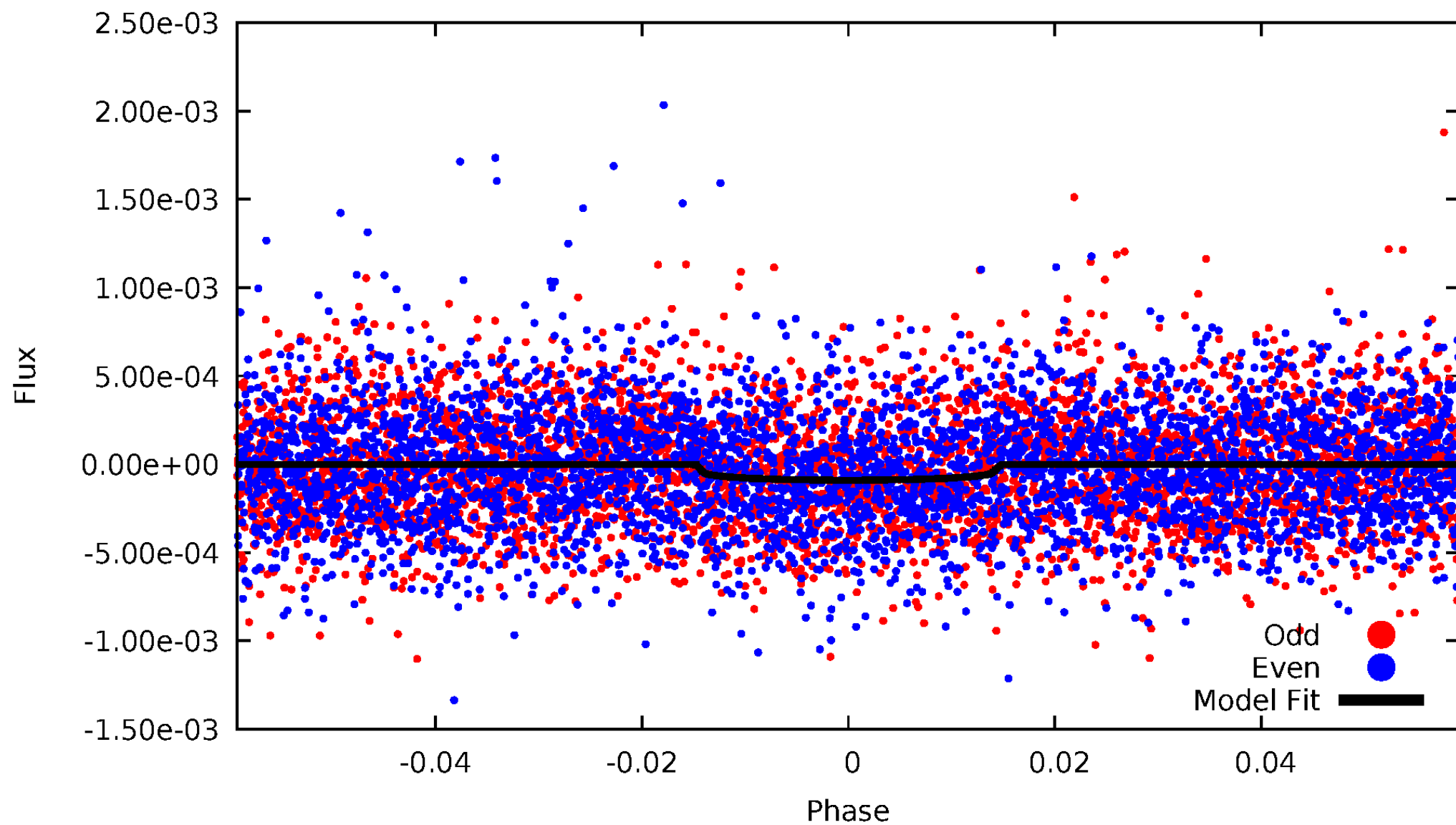


TCE 006307573-01



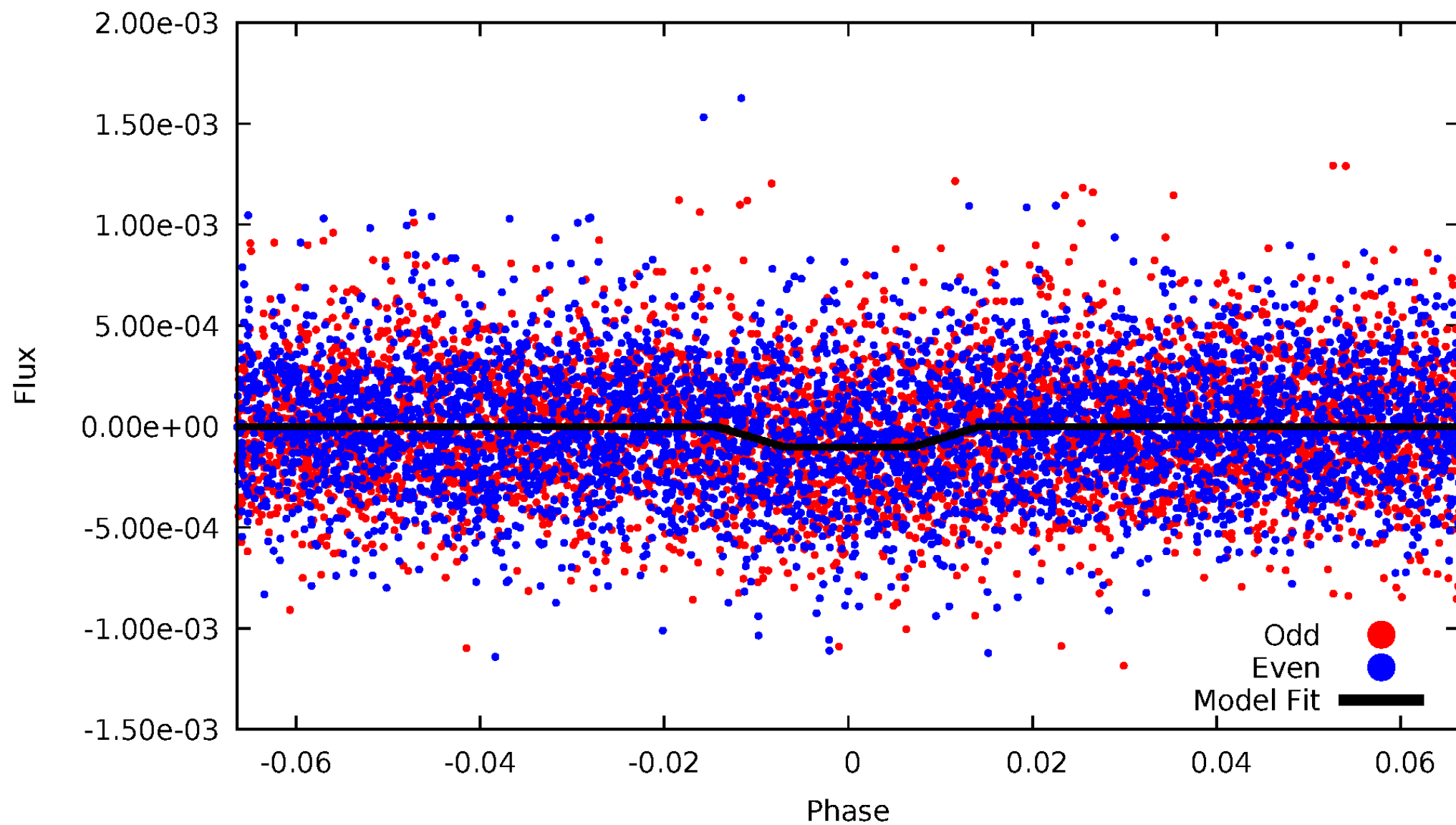
DV Odd/Even

TCE 006307573-01



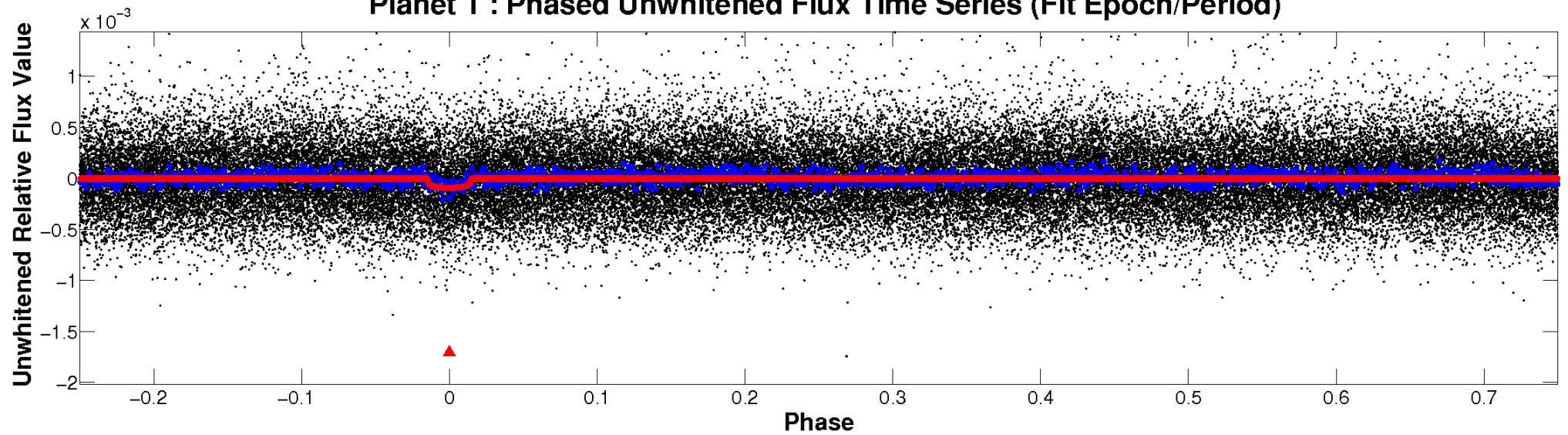
ALT Odd/Even

TCE 006307573-01

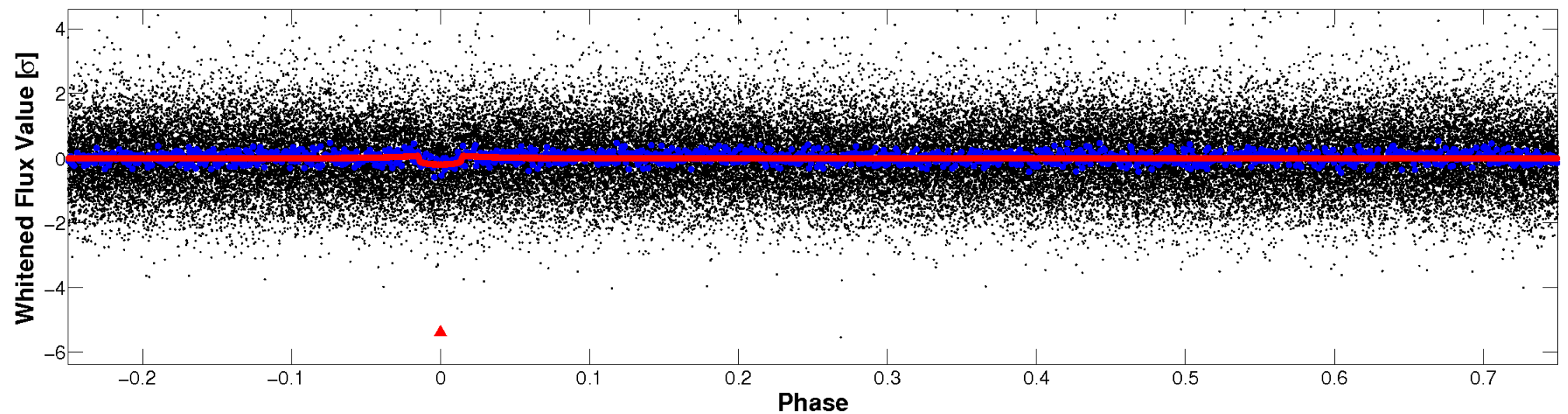


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

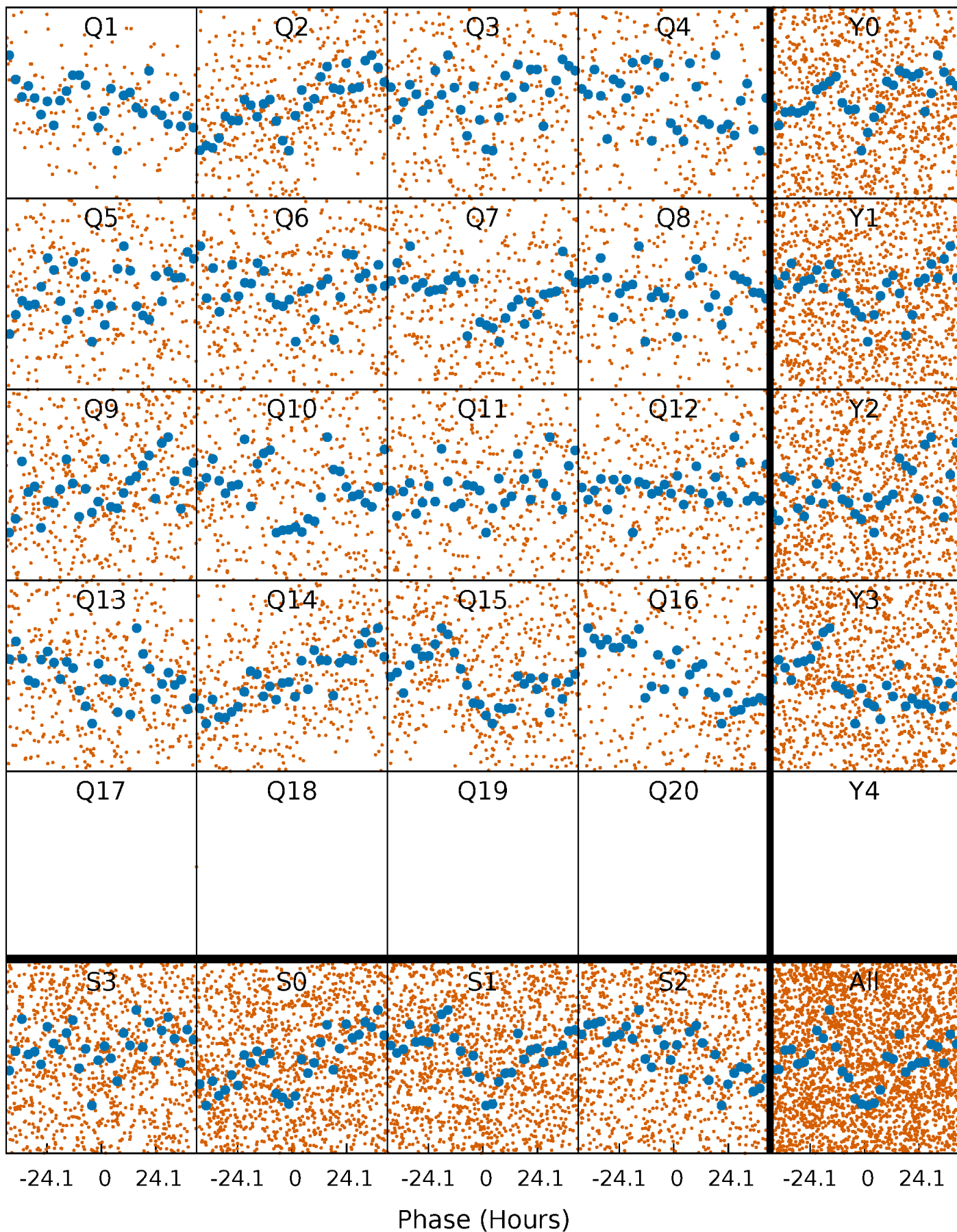


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



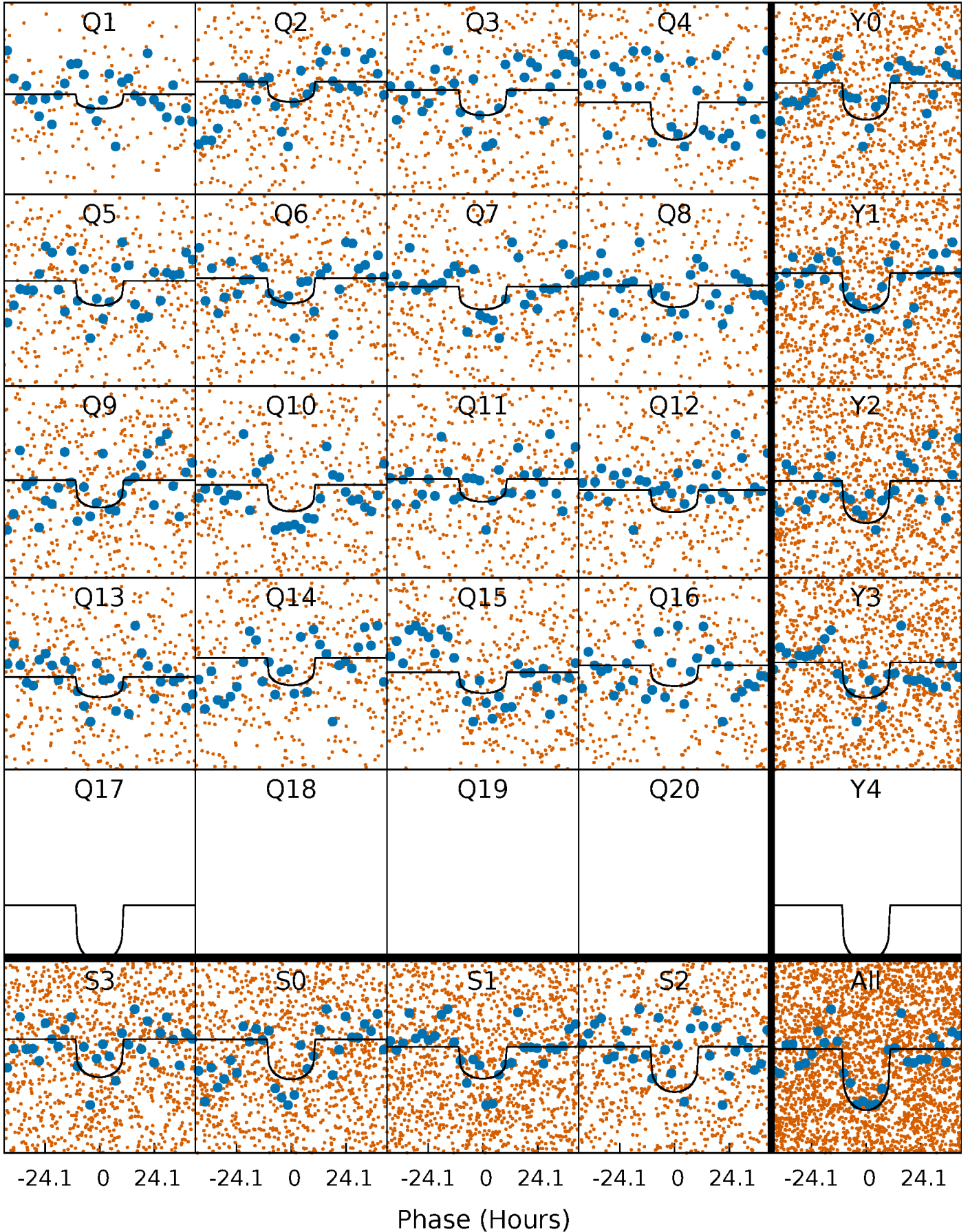
PDC Quarter-Phased Transit Curves

TCE 006307573-01 P= 29.741432 Days $T_0=157.485111$ (BKJD)



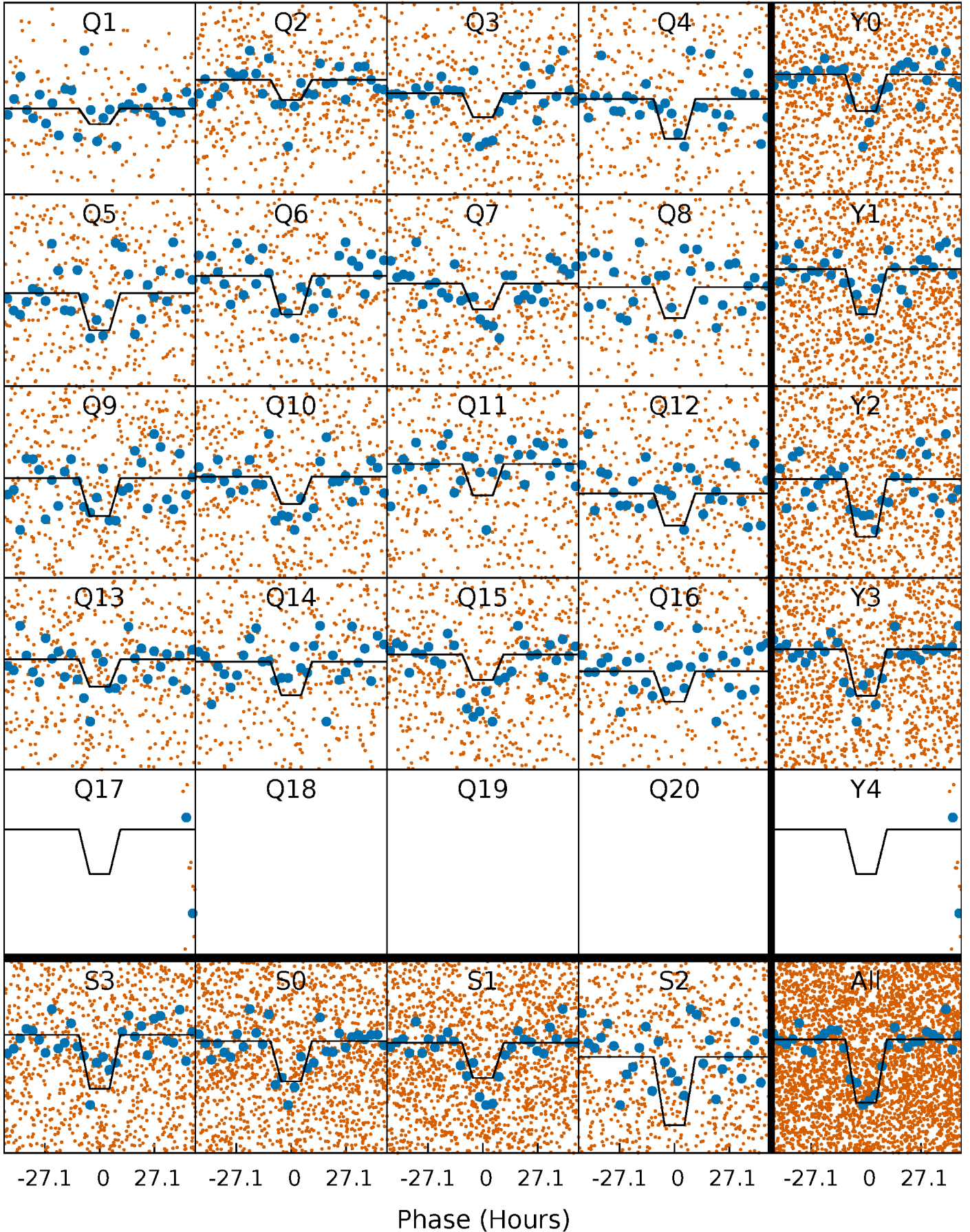
DV Quarter-Phased Transit Curves

TCE 006307573-01 P= 29.741432 Days $T_0=157.485111$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

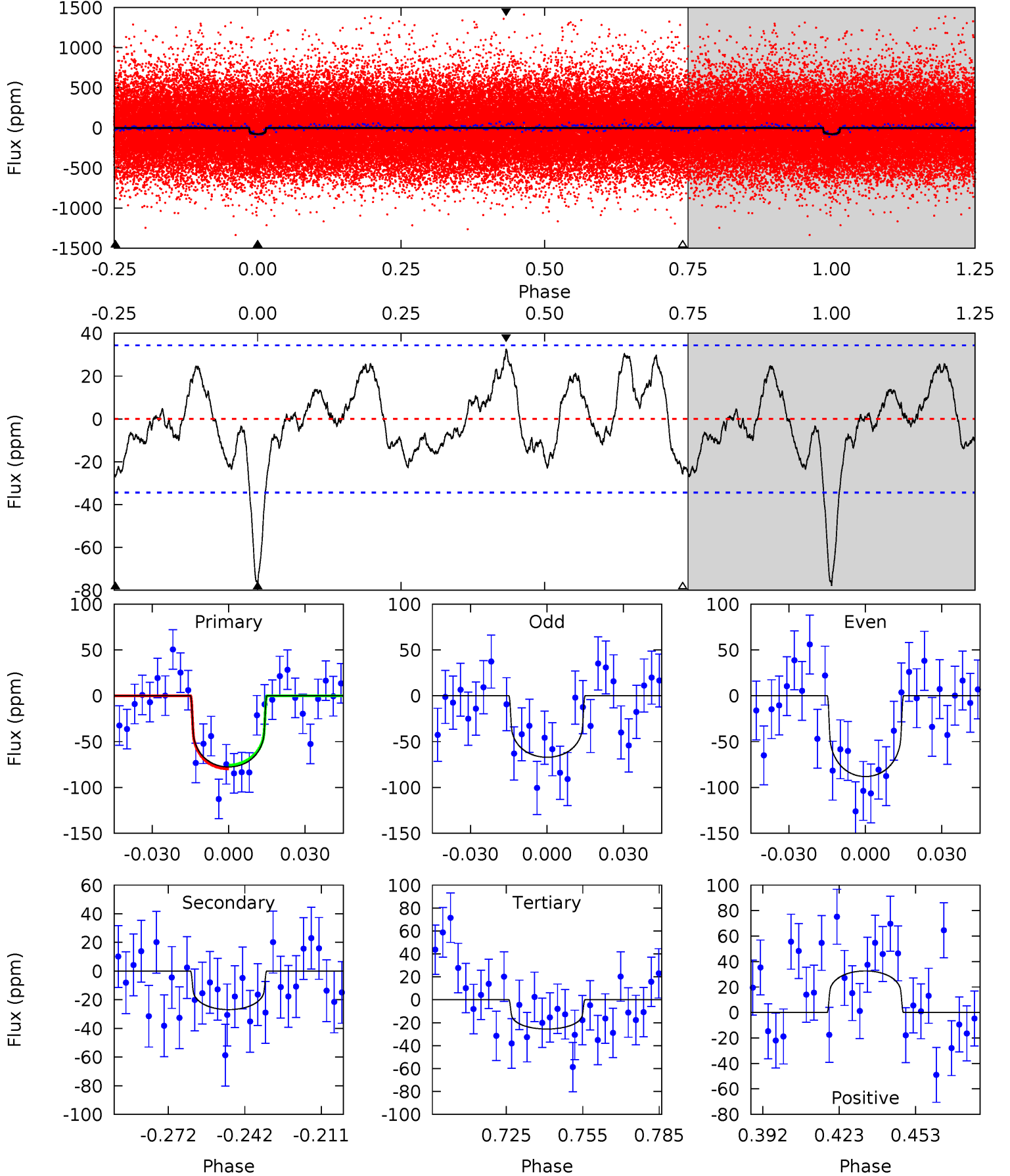
TCE 006307573-01 P= 29.742696 Days $T_0=157.462188$ (BKJD)



DV Model-Shift Uniqueness Test

006307573-01, $P = 29.741432$ Days, $E = 127.743679$ Days

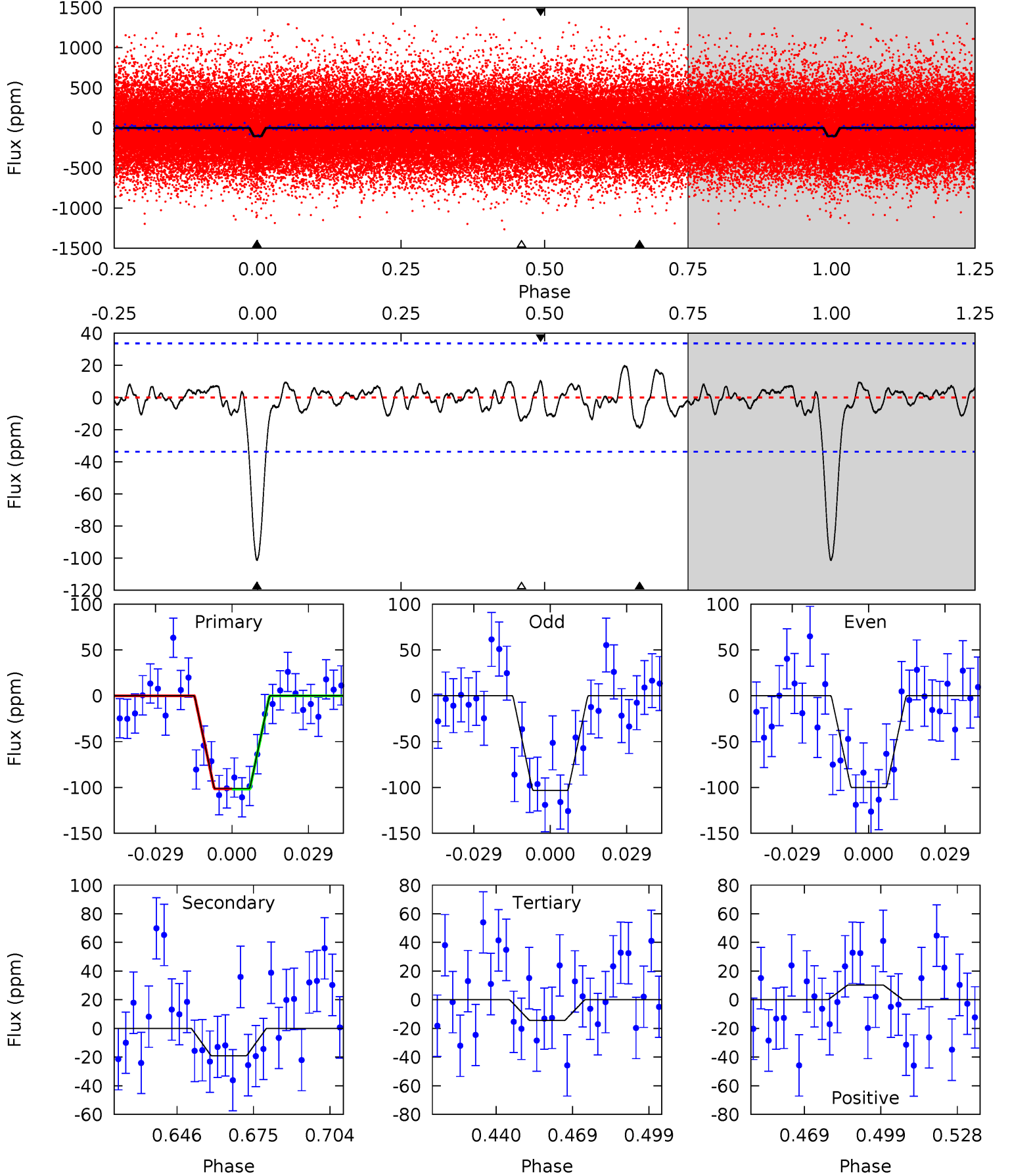
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.9	3.76	3.57	4.56	4.81	2.17	1.93	7.30	6.31	0.19	-0.80	1.48	1.10	0.30	0.28



Alt Model-Shift Uniqueness Test

006307573-01, P = 29.742696 Days, E = 127.719492 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.5	2.72	2.06	1.47	4.82	2.18	0.84	12.4	13.0	0.66	1.25	0.22	1.03	0.16	0.02



Stellar Parameters For KIC 006307573

	$T_{\text{eff}}(K)$	$\log(g)$	$[\text{Fe}/\text{H}]$	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4841^{+130}_{-145}	$4.751^{+0.021}_{-0.052}$	$-1.160^{+0.300}_{-0.300}$	$0.536^{+0.040}_{-0.023}$	$0.592^{+0.031}_{-0.038}$	$5.406^{+0.504}_{-0.949}$
	+3%/-3%	+0%/-1%	+26%/-26%	+7%/-4%	+5%/-6%	+9%/-18%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 006307573-01 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{\text{max}} (K)$	$T_{\text{obs}} (K)$	A_{obs}
DV	-27 ± 7	$0.58^{+0.17}_{-0.17}$	554^{+17}_{-18}	3809^{+557}_{-370}	1054^{+1216}_{-466}
Alt.	-19 ± 7	$0.60^{+0.18}_{-0.18}$	554^{+18}_{-18}	3545^{+495}_{-361}	704^{+796}_{-349}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{\text{obs}} \gg T_{\text{max}}$ AND $A_{\text{obs}} \gg 1.0$

DV Centroid Data

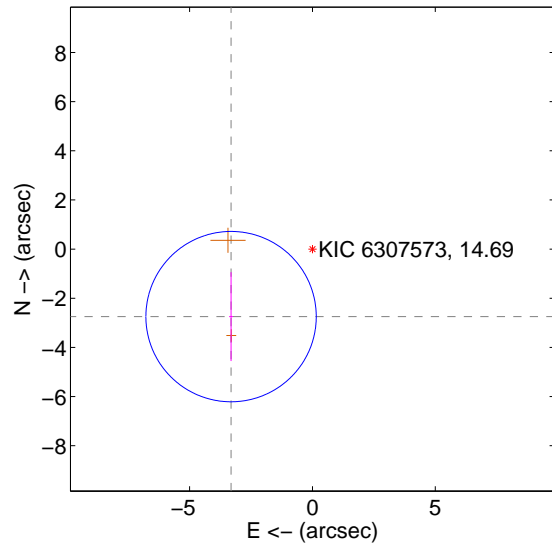
Supplemental centroid analysis for 006307573-01. Kepler magnitude: 14.69. Transit SNR 7.62

There are 0 quarters with good PRF difference image offsets

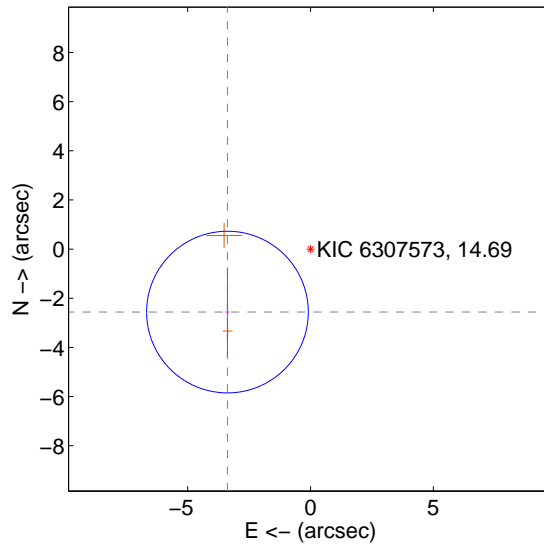
The direct PRF centroid is offset from the target star catalog position by about 0.21 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.302 ± 1.155	3.72	3.311 ± 0.078	-2.747 ± 1.807
PRF-fit source offset from KIC position	4.242 ± 1.096	3.87	3.381 ± 0.080	-2.562 ± 1.812
photometric centroid source offset	0.98 ± 2.41	0.41	-0.97 ± 2.43	-0.19 ± 1.72

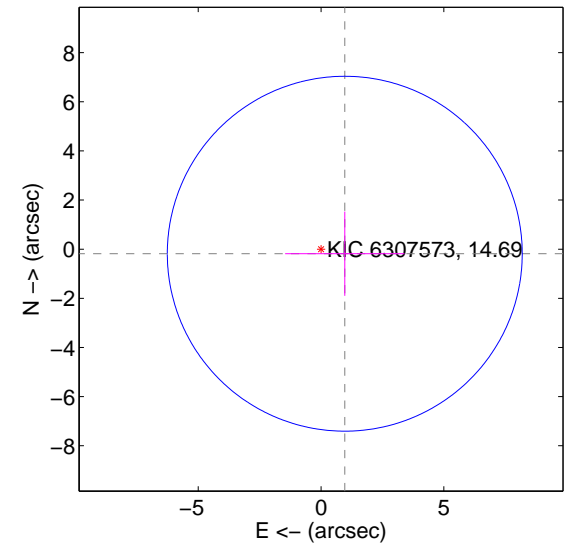
offset from difference PRF-fit to OOT PRF-fit



offset from difference PRF-fit to KIC position

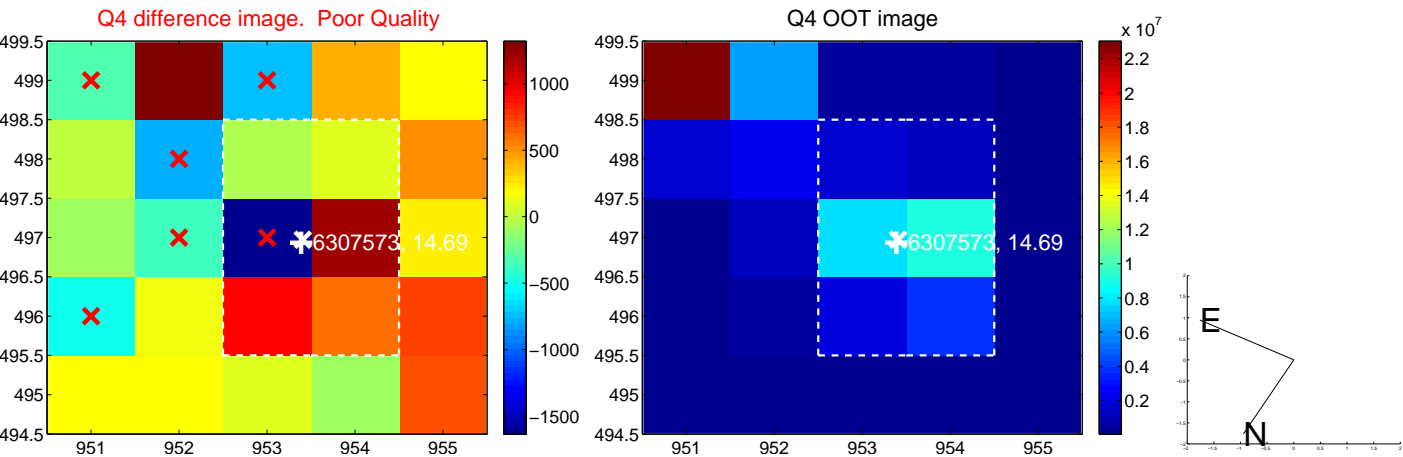
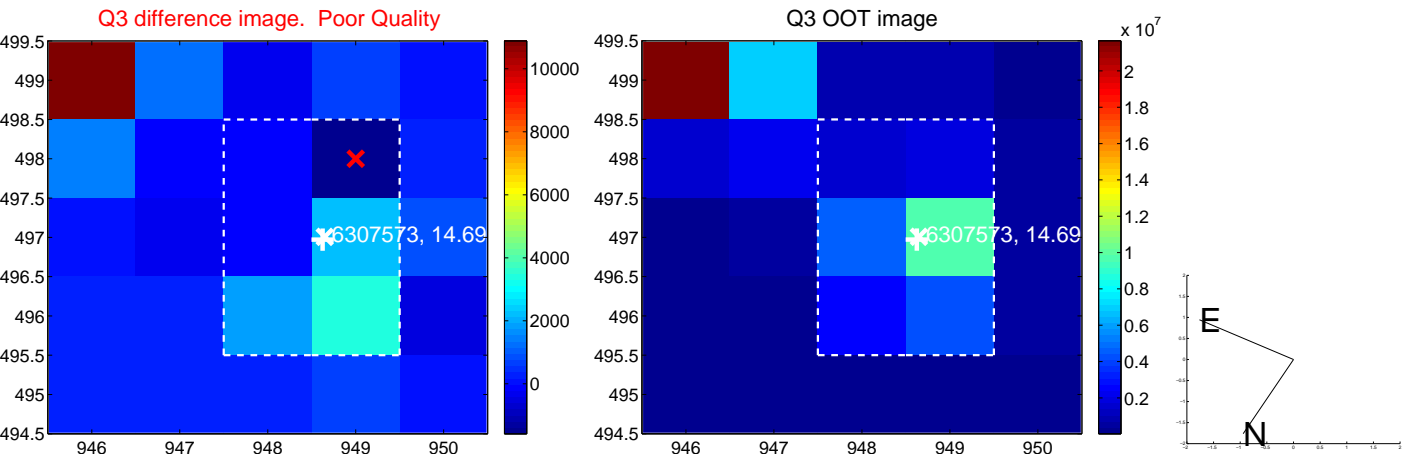
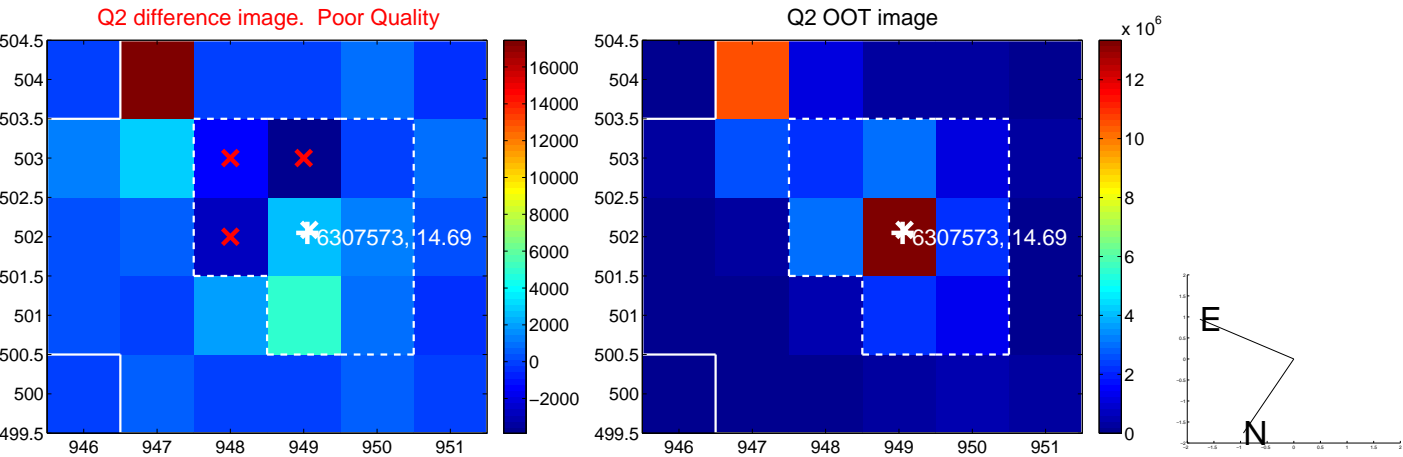
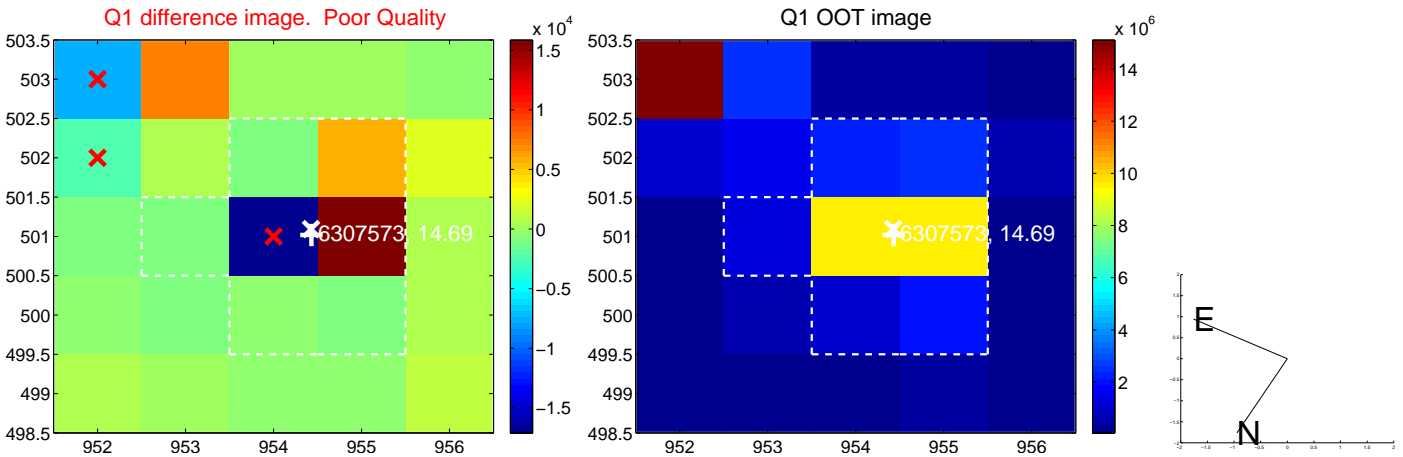


offset from photometric centroids

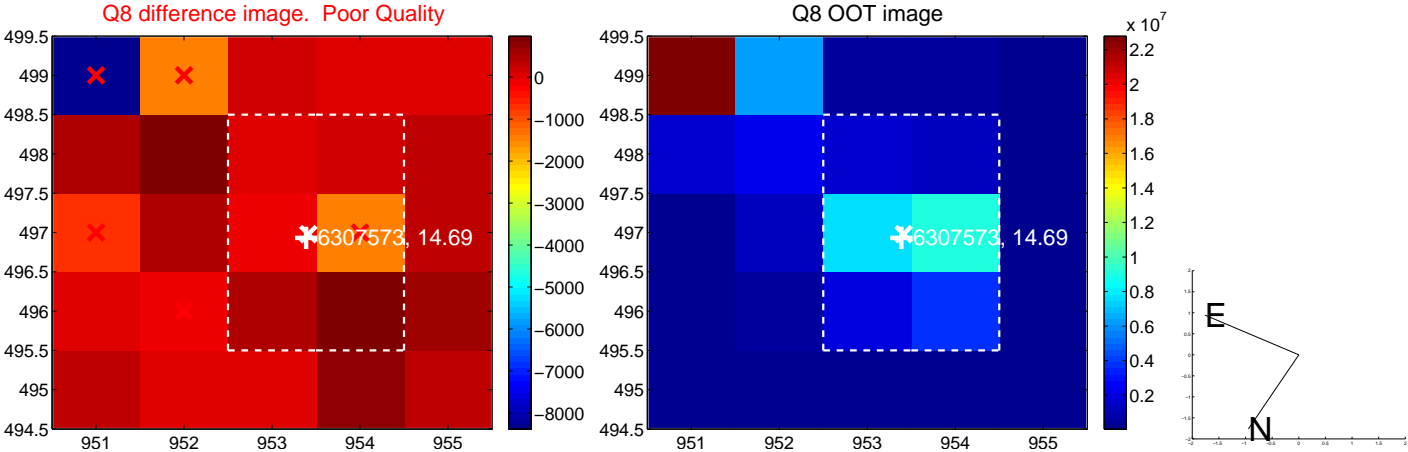
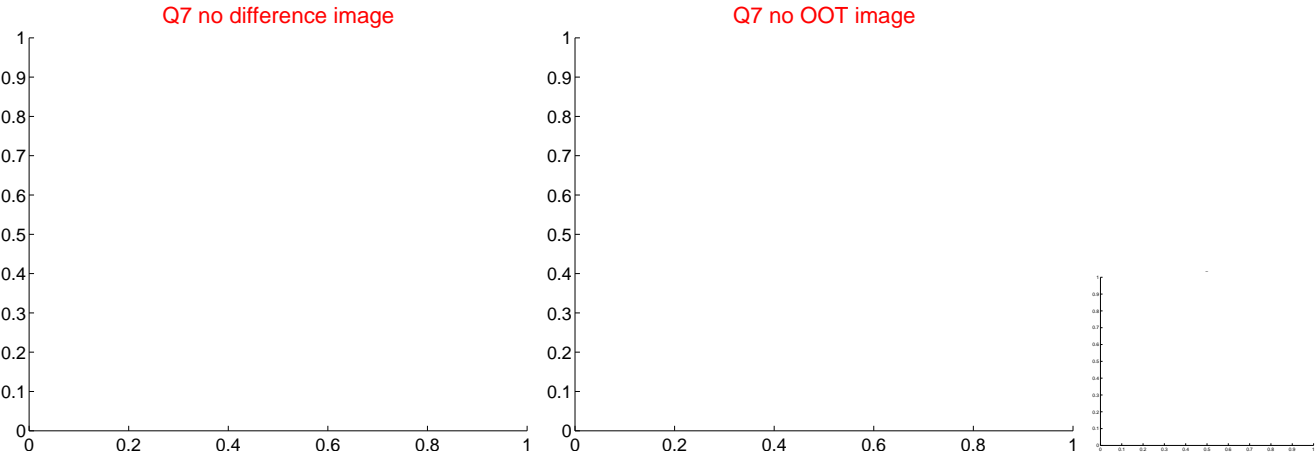
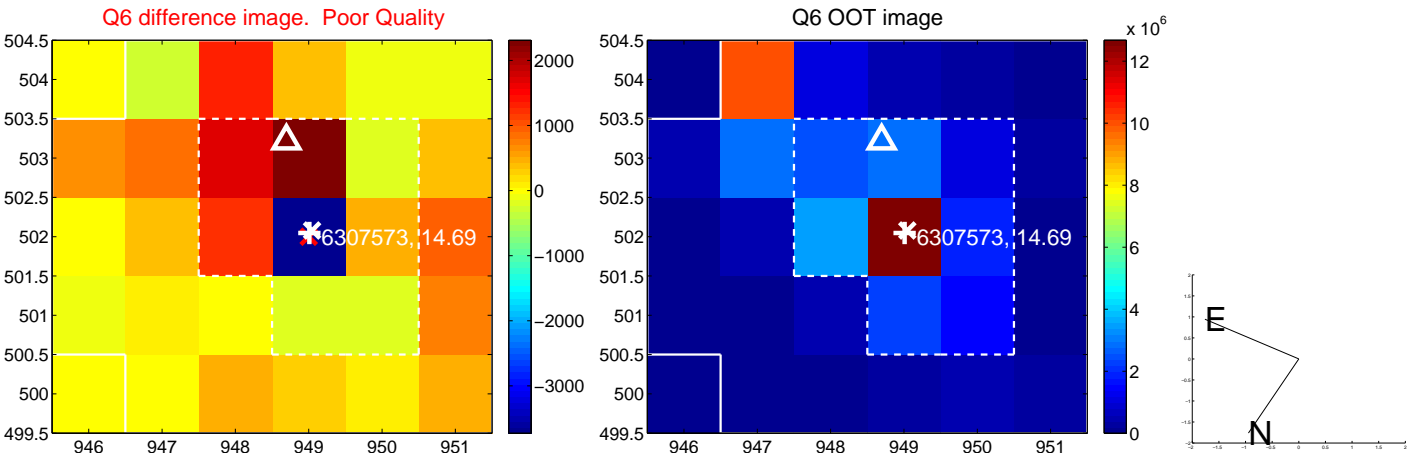
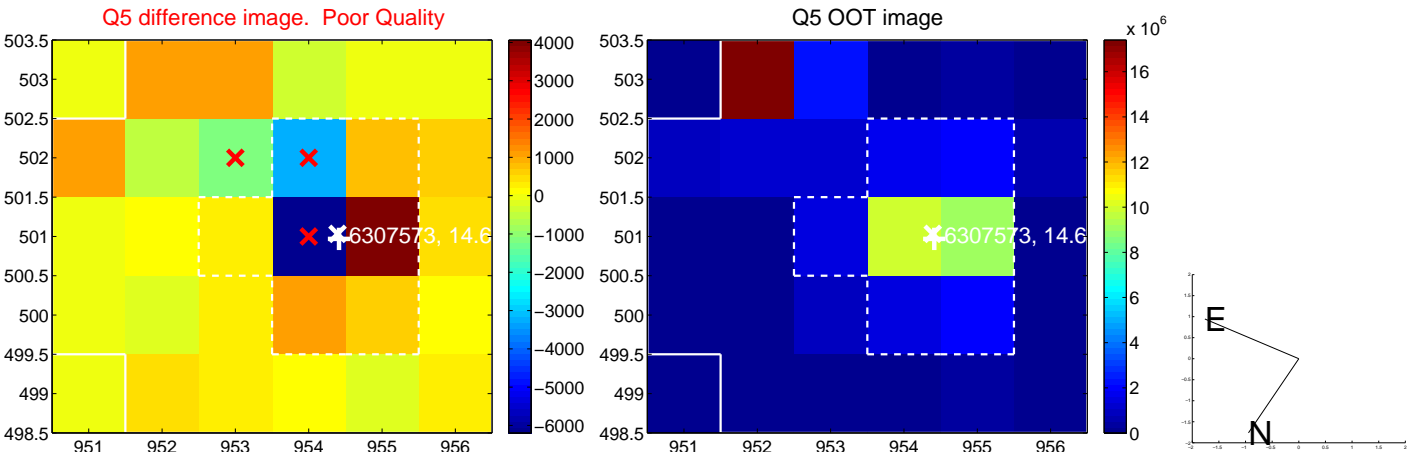


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

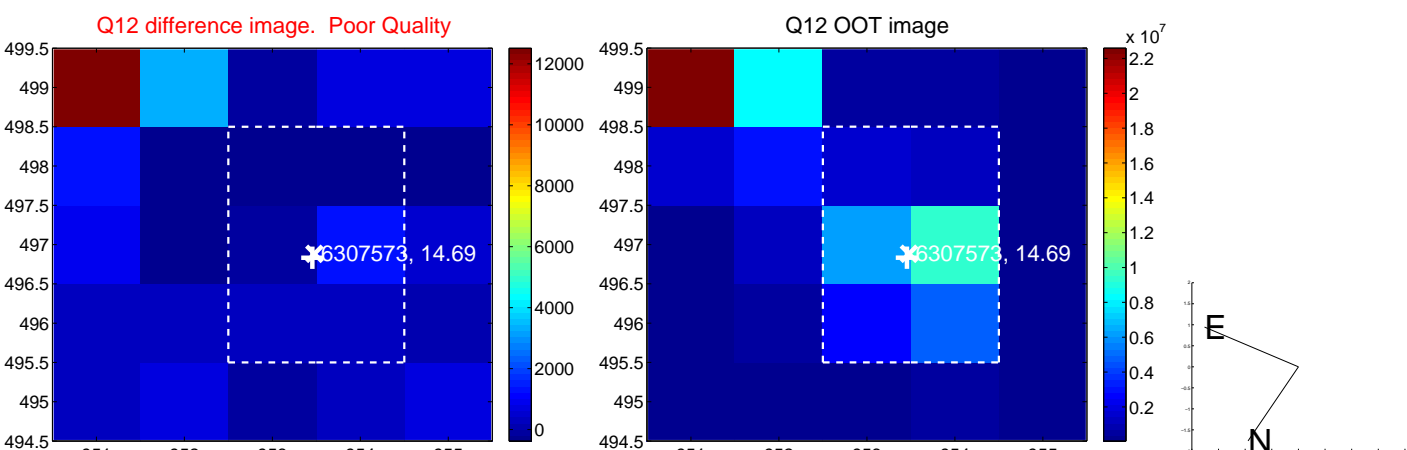
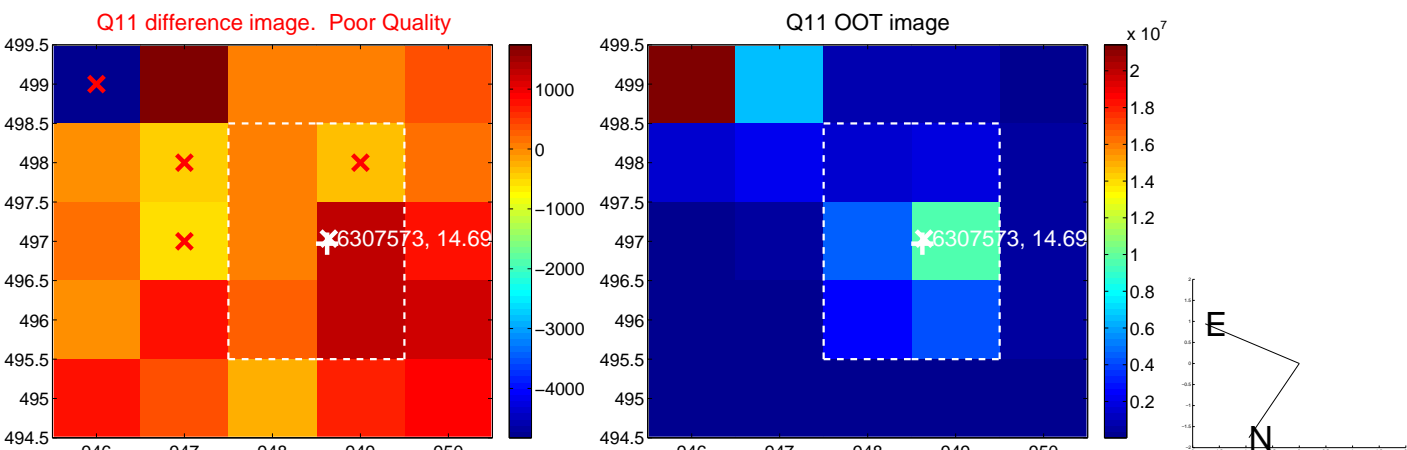
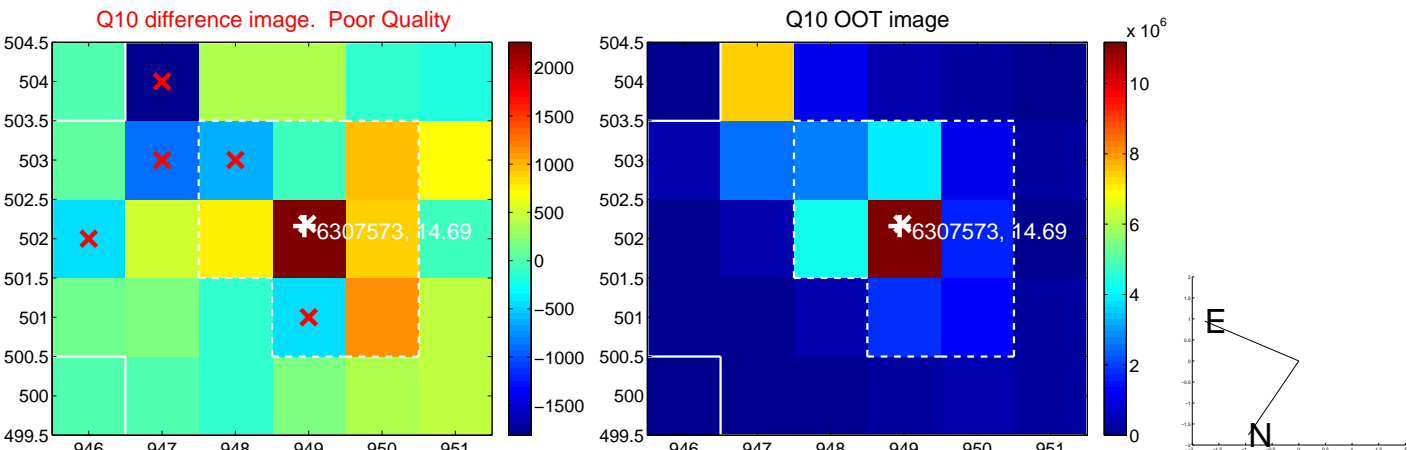
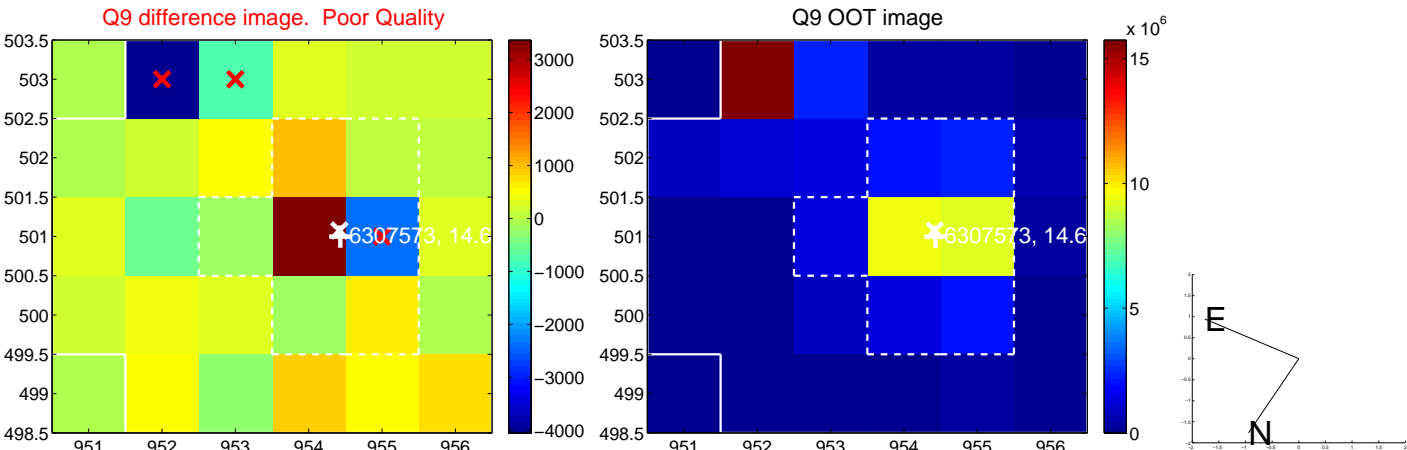
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



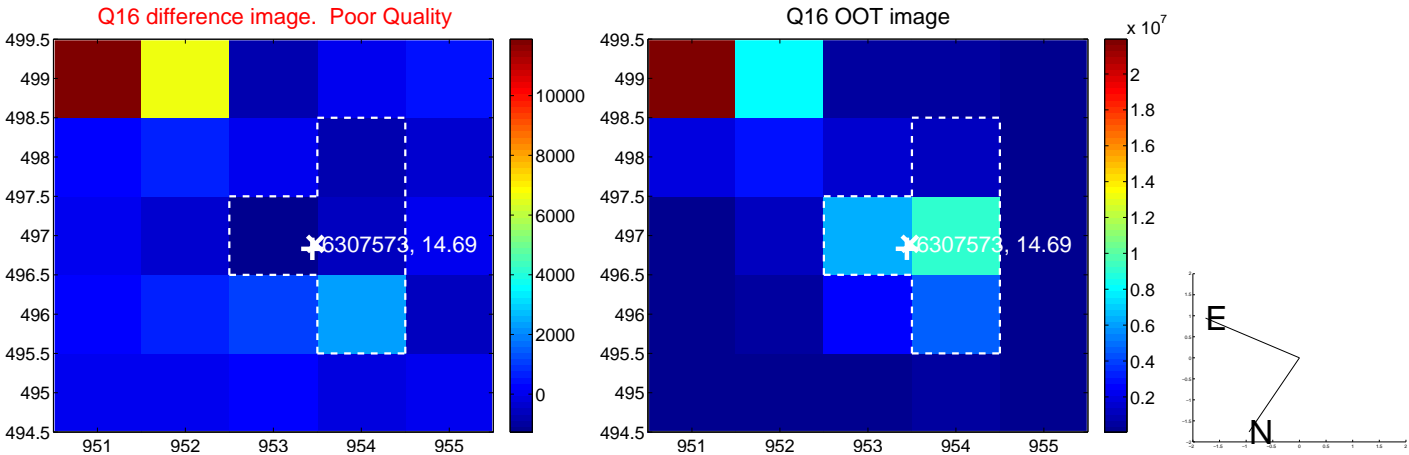
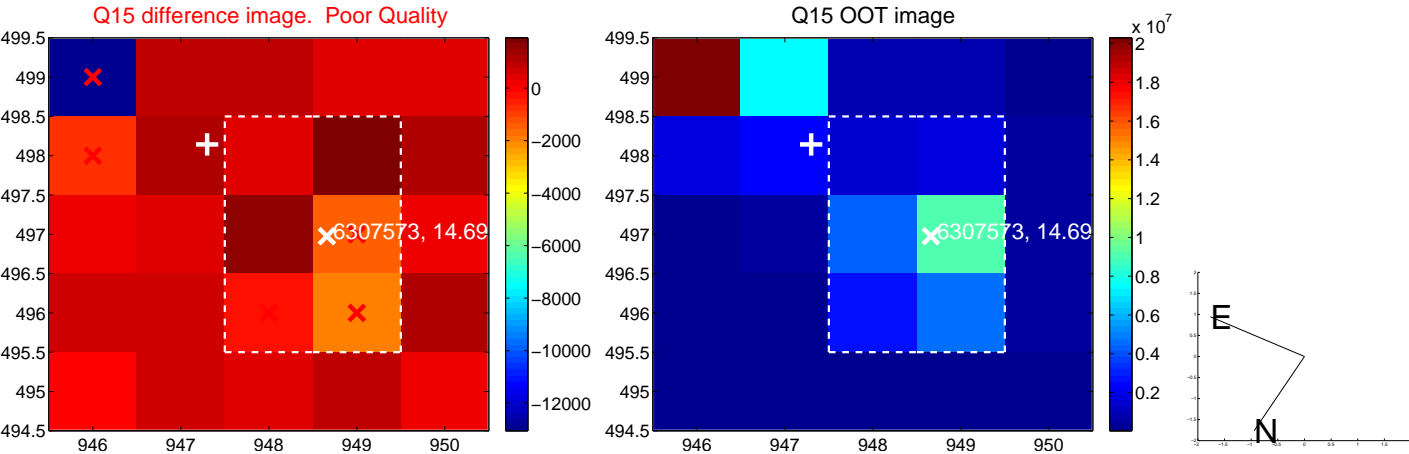
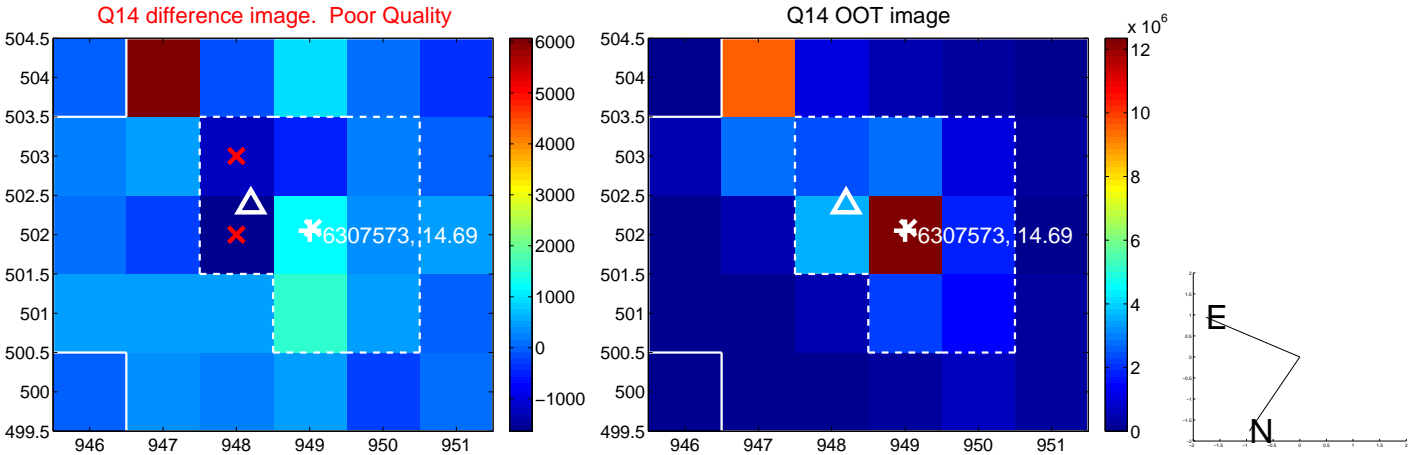
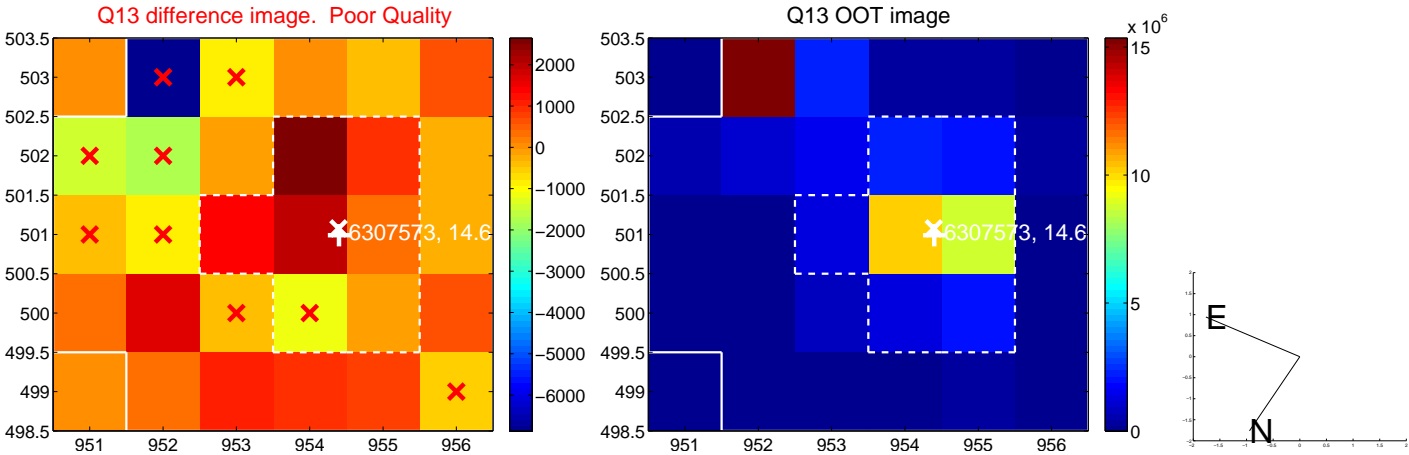
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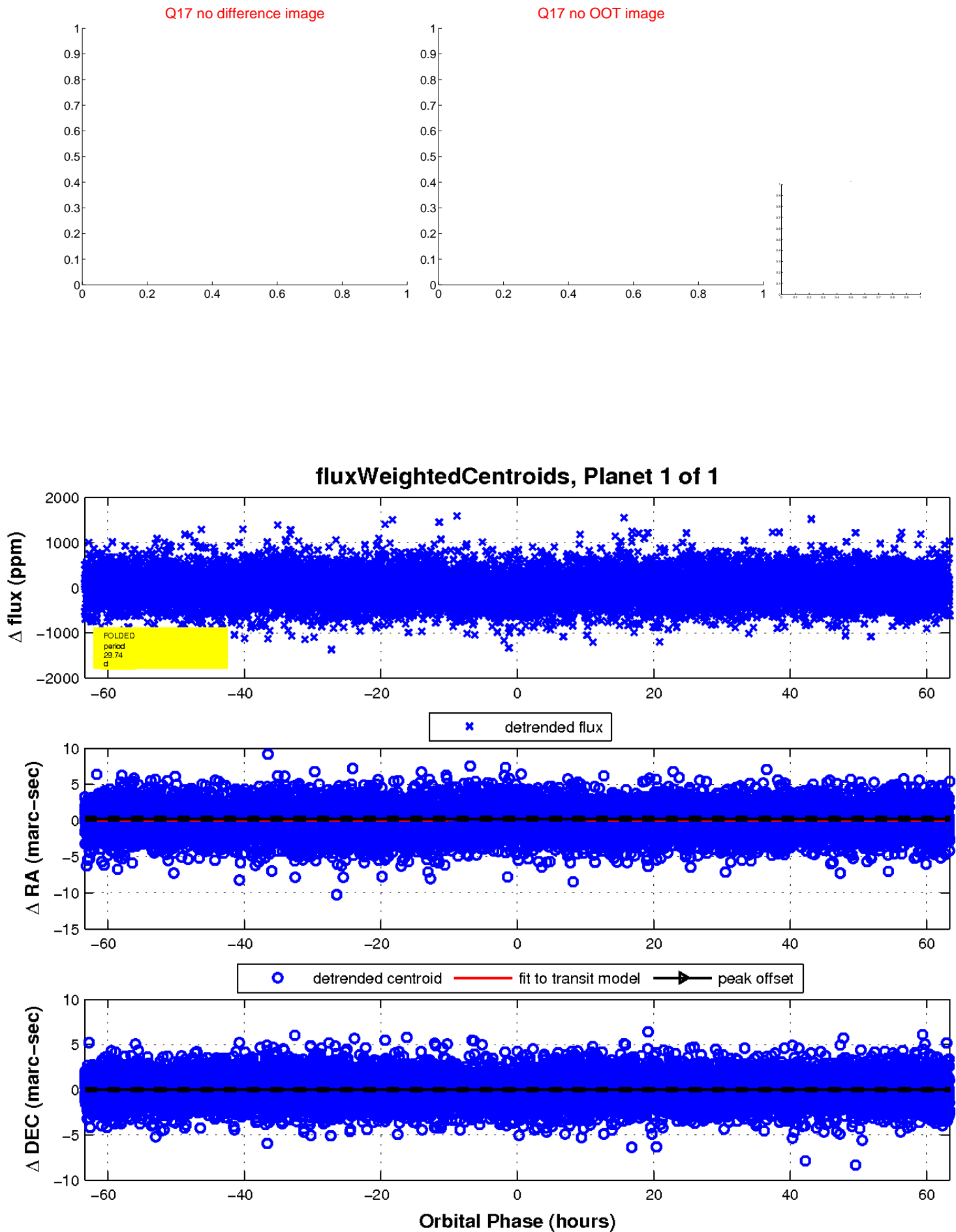
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



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white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

